

WalkBikeNC

NORTH CAROLINA STATEWIDE PEDESTRIAN AND BICYCLE PLAN



Summary Document

March 2013 - DRAFT for public and stakeholder review

Acknowledgements

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- » **NC Department of Environment and Natural Resources**
- » **NC Department of Health and Human Services**
- » **NC Department of Transportation**
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Introduction

Plan Purpose: Why a Statewide Pedestrian and Bicycle Plan?

WalkBike NC is North Carolina's first statewide master plan to define a vision, goals and strategies for improving walking and bicycling for residents and visitors. North Carolina is ideally positioned to increase its walking and bicycling activity. We are blessed with weather favorable to outdoor activity; the core of our towns and cities were developed with dense street grid networks that create acceptable travel distances for pedestrians and cyclists; we have the nation's oldest state agency-led pedestrian and bicycle program, which has been working for the past four decades to improve conditions for walking and biking; and most importantly, **our residents (NCDOT's customers) want to walk and bike more.**

Bicycling has been part of transportation in North Carolina for more than 100 years. Bicyclists helped champion North Carolina's "Good Roads" movement in the early 1900's. Formal planning for bicycle accommodation in North Carolina began in 1974 with passage of the Bicycle and Bikeway Act. In the past two decades, more attention has also been given to improving conditions for walking. For example, the Safe Routes to School Program promotes walking to and from school as a way of improving the health and wellness of our children.

North Carolina, however, faces significant challenges in becoming more friendly to pedestrian and cycling activities. First and foremost, **walking and bicycling are not equivalent quality transportation choices for the vast majority of North Carolinians.** Most people prefer to transport by automobile because that is the highest quality choice and is where the vast majority of investment has been made in our transportation network. Given present conditions throughout our state, it is often not safe, convenient, nor efficient for residents and visitors to walk and bike within or between our communities. We also have not invested enough in programs that inform, educate and promote walking and bicycling.

Despite the obstacles, there has never been a better time than the present to build on prior achievements and define the future for walking and bicycling. WalkBike NC is for all North Carolinians, and it is a call to action. **This Plan identifies current conditions for walking and bicycling in North Carolina and serves as a policy guide for state agencies, local governments, and private sector interests to develop a transportation system that safely and efficiently accommodates walking and bicycling.** This Plan bridges the gap between current conditions and what North Carolinians desire for walking and bicycling, in terms of safety, mobility, and connectivity. This Plan defines the walking and bicycling needs of North Carolinians, as well as the policies, projects, and programs that must be implemented to meet these needs. WalkBike NC also defines appropriate infrastructure standards and defines a method for measuring success.

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About this document:

This 50-page summary of the full plan provides an overview of the key findings and recommendations. The full Plan document is available for review and can be downloaded at www.WalkBikeNC.com.

Two-page handouts were also developed for the five goals and core values of the plan and are also available at www.WalkBikeNC.com.

Vision and Goals

Based on input received from thousands of North Carolinians, it is clear that there is a high level of interest and desire to embrace all of the benefits that are derived from walking and bicycling. The vision and goals for WalkBike NC have been shaped by this input.. The vision is also built on a foundation established by NCDOT to improve the quality of transportation for all North Carolinians:

NCDOT Mission Statement:

"Connecting people and places safely and efficiently, with accountability and environmental sensitivity to enhance the economy, health, and well-being of North Carolina."

Working committees, established by NCDOT, that included representatives from the North Carolina General Assembly, state agencies that championed and partnered to craft this Plan, and advocates in the fields of health, economic development, public safety, environmental stewardship and mobility, contributed to defining the vision and goals for WalkBike NC.

WalkBike NC Vision Statement:

"North Carolina is a place that incorporates walking and bicycling into daily life, promoting safe access to destinations, physical activity opportunities for improved health, increased mobility for better transportation efficiency, retention and attraction of economic development, and resource conservation for better stewardship of our environment."

WalkBike NC Pillars/Principles:

Five main principles, or plan 'pillars', are derived from the vision statement, defining major themes of interest and emphasis within the Plan:



Improve mobility and accessibility and reduce traffic congestion through with greater investment in walking and biking infrastructure (through a Complete Streets approach), improved transportation equity and choice, connectivity among transportation modes, and reduced traffic congestion through coordinated land use and transportation planning.

Goal: Double state pedestrian and bicycle mode share by 2020 and double each decade thereafter.



Promote safety for all roadway users through strategic, consistent, and coordinated pedestrian and bicycle facility improvements, education, and enforcement strategies.

Goal: Reduce per capita pedestrian and bicycle crash rate by 10% by 2020 and by 10% each decade thereafter.



Contribute to improved public health by providing active living environments with safe, connected, accessible facilities along with programs that encourage walking and bicycling.

Goal: Reduce inactivity rates by 10% by 2020 and by 10% each decade thereafter.



Maximize economic competitiveness, return on investment and employment opportunities by creating more attractive walkable and bikable communities through increased public and private funding.

Goal: Increase investment in pedestrian and bicycle projects and programs by 25% and thus return on investment.



Be good stewards of our environment by reducing automobile dependence, completing a Greenprint Plan for North Carolina, and linking together the state's natural and cultural resources through a statewide network of greenways.

Goal: Increase mileage of greenways by 10% by 2020 and by 10% each decade thereafter.

Goal: Double state pedestrian and bicycle mode share by 2020 and double each decade thereafter.

The Planning Process

WalkBike NC was completed over twelve months, informed by a robust public engagement process. NCDOT, the consultant team, and stakeholders used a variety of methods to reach out to citizens and stakeholders across North Carolina to engage them in a meaningful dialogue and process of public input. NCDOT sponsored a special project web site, WalkBikeNC.com, that featured a welcome and introductory video by Deputy Secretary for Transit Paul Morris, FASLA. The website was linked to Facebook, LinkedIn, Google, and Twitter in order to capture a broader range of interests, and to NCDOT's primary transportation web portal. Additional links were made to partner web sites.

NCDOT and its consultants also hosted 15 focus group meetings, 3 regional workshops, and attended 16 festivals and events across North Carolina whose total attendance exceeded 600,000 participants. Additionally, more than 30 organizations and groups from a variety of disciplines including health, safety, environment, mobility, and economic development were also engaged in the planning process. The result of this broad participation is the development of a statewide pedestrian and bicycle master plan that truly reflects the vision, ideas, concerns, and recommendations of North Carolinians.

Project Funders and Key Stakeholders

The WalkBike NC Plan was jointly funded by the North Carolina Department of Transportation (NCDOT), Department of Environment and Natural Resources (DENR), Department of Commerce, Department of Health and Human Services (DHHS), Blue Cross Blue

Timeline of Plan Development

Key steps in the development of the plan are outlined below. The process included weekly NCDOT staff & consultant meetings, plus Steering Committee and Advisory Committee meetings at every stage.

2012

July-Aug

Begin project

Meet with committees to discuss the project vision and current conditions

Launch web site, social media & online input map

Begin evaluation and interviews for updating the State Bicycle Route



Project web site

2012

Sept-Oct

Conduct outreach at 3 Regional Workshops, 7 Focus Group Meetings, and 16 public events across North Carolina



Public outreach

2012

Nov-Dec

Develop the first draft of the WalkBikeNC Plan

Collect comments from staff and committee members

Launch the WalkBikeNC Blog



Draft plan & blog

2013

Jan-Feb

Revise the Draft Plan and develop additional plan products



Plan summary & topic area summaries

2013

Mar-April

Second round of focus group meetings and stakeholder meetings

Final plan meetings & presentations

Final revisions to plan products



Focus group/Stakeholder Meetings

2013

May

Plan Approval & Adoption



Plan approval and adoption



◀ Bicycle advocacy groups from across the state met with WalkBikeNC project planners in 2012, one of many similar outreach meetings held throughout the planning process.

Shield of North Carolina Foundation, and the Davis Wealth Management (DWM) Foundation. NCDOT assembled a Steering Committee and an Advisory Committee that were comprised of legislators, agency staff, Division of Bicycle and Pedestrian Transportation staff, NCDOT divisions, MPO/RPO staff, bike/ped advocacy groups, funding partners, and county and municipal representatives. Intradepartmental and interdepartmental efforts were instrumental in guiding the development of this plan and laid the foundation for future coordination.

What does the plan include?

WalkBikeNC provides a review of walking and bicycling in North Carolina today, including the history of pedestrian and bicycle planning in North Carolina, relevant reports and surveys, current trends, people and processes involved in pedestrian and bicycle planning, and a review of current pedestrian and

bicycle facilities around the state. The Plan includes a guide for addressing statewide pedestrian and bicycle policy in North Carolina. This information, along with public input and the guidance of the Steering Committee, was used to inform the recommendations for North Carolina pedestrian infrastructure and bicycle infrastructure. Chapters on NCDOT design standards and programming for health, safety, and active living provide a comprehensive guide on how pedestrian and bicycle planning and design can more specifically support the goals of safety, health, economics, transportation efficiency, and stewardship. The implementation and tools for benchmarking and accountability sections then provide a blueprint of the steps and evaluation tools needed to monitor the plan's progress and turn its vision and goals into reality. The Plan is described through nine chapters devoted to these topics. There is also an extensive appendix that covers additional topics.

Trends and Challenges

North Carolina is Growing and Changing

North Carolina's communities have undergone significant change in the 21st century. In the coming decades, changes in population and land use development will unfold that will create opportunities and challenges for the state. One of the most important influences on North Carolina's future will be population growth, fueled primarily by immigration from other states and countries. **In 2010, North Carolina ranked as the tenth most populous state in the country with 9.5 million people.¹ By 2030, it will be home to an estimated 12.2 million people, surpassing Michigan, Ohio, and Georgia to become the seventh most populous state.²**

This growth will be coupled with a continued population shift from rural to urban areas. **In 1990, 50.3% of North Carolina's population resided in urban areas. By 2000, that percentage had increased to 60.3% and is expected to reach over 75% by 2040.²** In addition, population density has reversed its downward trend in North Carolina's major cities. Population density (number of people living per square mile) and migration from rural areas to urban centers has increased. A larger, increasingly urban population will influence the mobility, health, lifestyle, and economic vitality of North Carolinian customers and our communities. These trends of more people living in more densely

populated communities are pointing the way towards the need for better places for North Carolina residents to walk and bike.

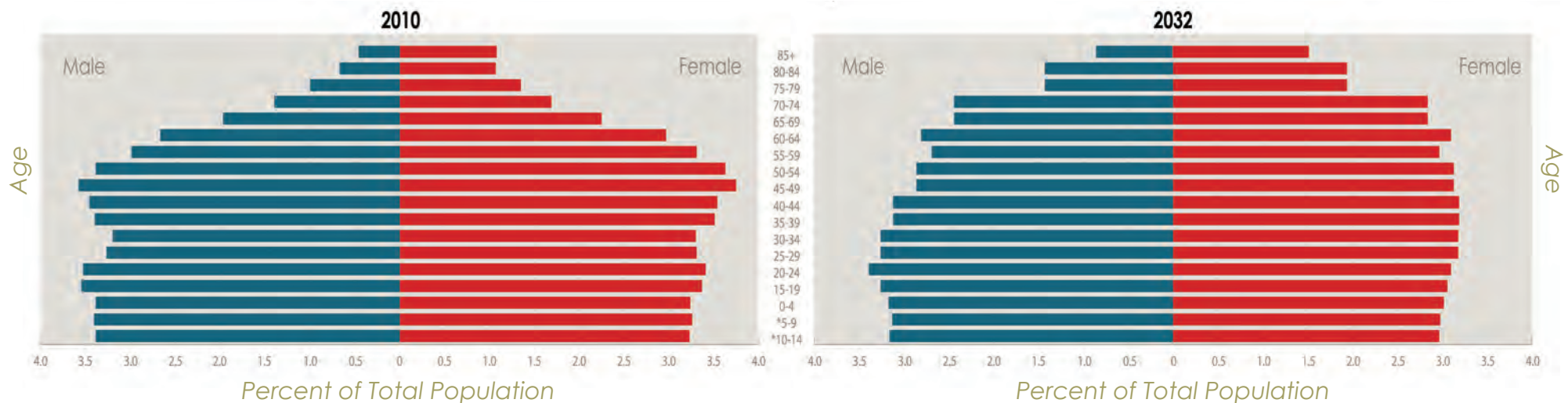
Another trend that illustrates a need for improved walking and bicycling options is our changing age composition. One of the most important emerging trends in our state is the increasing number of **North Carolinians age 65 or older: this segment of the population is anticipated to increase from 13% in 2010 to nearly 20% by 2032, an increase of more than 2.3 million people.²** An estimated one in five (21%) Americans age 65 or older do not drive due to declining health, declining mental capacity, safety concerns, lack of access to an automobile, or personal preference.

An increase in the percentage of households with a single occupant is another change that will affect the transportation needs and preferences of North Carolina's population. The rise in single person households will influence where people choose to live, the types of housing they prefer, and how they get around their community. Smaller housing units in more walkable neighborhoods will be in greater demand, and households with a single income will likely desire more affordable transportation options

than the private automobile. Two-thirds of Americans already consider the walkability of an area in their housing decision, with grocery stores, pharmacies, hospitals, and restaurants being the most-desired places within a short walk from home.³ North Carolina can accommodate this growing demographic by creating communities where residents can safely and regularly walk and bike for fun or utility.

These trends, in addition to health, economics, and safety, underscore the need for targeted, forward-thinking investments that will make North Carolina's communities safer, healthier, more economically robust, and more accessible for everyone.

North Carolina Population Pyramids, 2010 and 2032



Age Group	2010	Percentage
Under 18	2,281,635	23.9%
18-24	938,618	9.9%
25-44	2,573,744	27.0%
45-64	2,507,407	26.3%
65+*	1,234,079	12.9%

Age Group	2032	Percentage	Change from 2010
Under 18	2,614,632	22.1%	14.6%
18-24	1,083,644	9.1%	15.5%
25-44	3,017,305	25.5%	17.2%
45-64	2,786,665	23.6%	11.1%
65+	2,328,177	19.7%	88.7%

◀ Age Population Pyramid for North Carolina, 2010; and projected for 2032. Sources: US Census Bureau, 2010; http://www.osbm.state.nc.us/demog/countytotals_agegroup_females_2032.html



Mobility

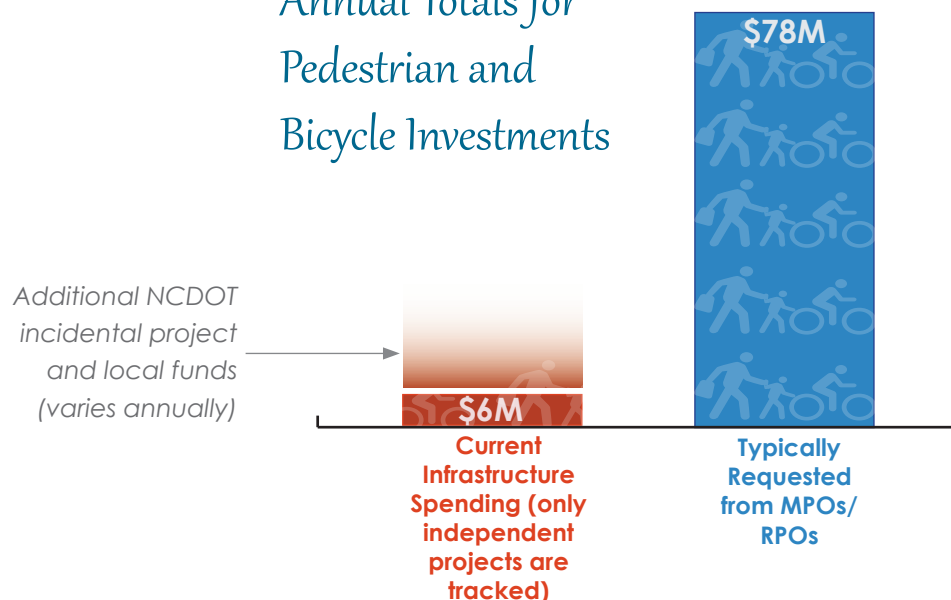
Needs versus Funding

In North Carolina, currently only 0.2% of NCDOT transportation independent project funding goes towards pedestrian and bicycle infrastructure development. The 2040 North Carolina Statewide Transportation Plan (2012) reports pedestrian and bicycle conditions to be at the low end of level of service "D".

MPOs, RPOs, and municipalities, who have completed customer-driven pedestrian and bicycle plans, submitted pedestrian and bicycle investment needs of \$78 million per year (2018-2022 investment needs), a figure that does not reflect the entire state need because not all local governments have completed such plans. Seven MPO/RPO input summits that took place in 2012 as part of the State Prioritization process

As defined by NCDOT, level of service (LOS) is the "quality of service from the perspective of the user" and can vary from a "desired state" of LOS A to a failing state of LOS F.

Annual Totals for Pedestrian and Bicycle Investments



recommended that \$47.4 million should be allocated to pedestrian and bicycle projects per year (ten times the current amount) to raise the pedestrian and bicycle level of service to the low end of "C."

Opportunity to Increase Walking and Bicycling Rates in North Carolina

Commute rates for walking and bicycling in North Carolina currently fall below the national average, with just 0.2% of North Carolina commuters bicycling to work and 1.8% walking to work, compared to 0.6% bicycling and 2.9% walking nationwide. **This places North Carolina 42nd for walking commute rates and 41st for bicycling commute rates in nationwide state rankings.**⁴ When compared to neighboring states, North Carolina is slightly above average with higher rates than all of its neighbors except Virginia.

An estimated 40% of all trips (commute and non-commute) taken by Americans each and every day are less than two miles, equivalent to a bike ride of 10 minutes or less; however, just 13% of all trips are made by walking or bicycling nationwide.⁴ To put these numbers into perspective, 34% of all trips are made by walking or bicycling in Denmark and Germany, and 51% of all trips in the Netherlands are by foot or by bike.⁵ Germany, Denmark, and the Netherlands are wealthy countries with high rates of automobile ownership, just like the United States, and yet an emphasis has been placed on providing quality walking and bicycling environments which has alleviated the reliance on motor vehicles for short trips.



Safety

Safety Trends and Challenges in North Carolina

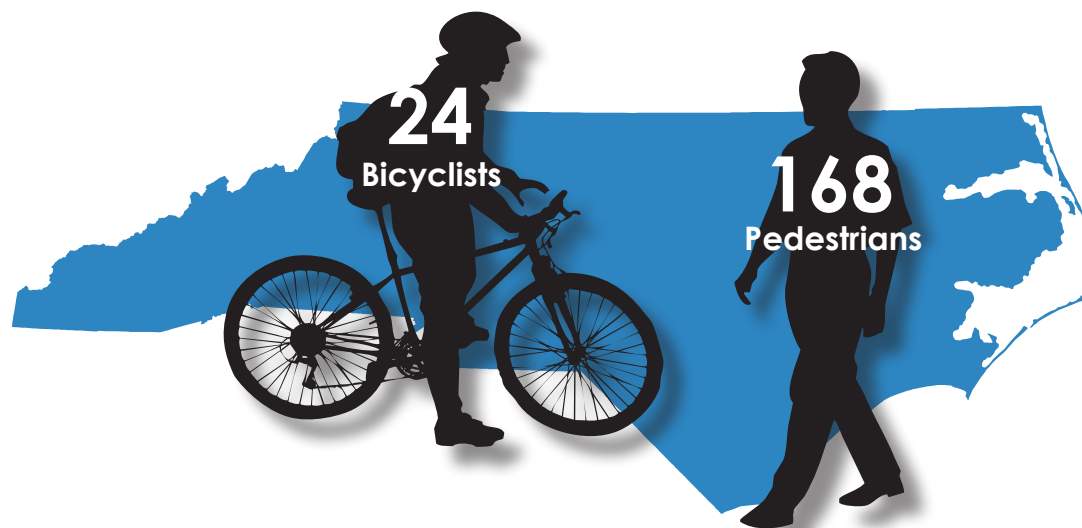
According to a survey of 16,000 North Carolina residents for the 2011 North Carolina Bicycle and Pedestrian Safety Summit, the most commonly reported safety issue for walking and bicycling was inadequate infrastructure (75%).⁶ The figures below show that the respondents have cause for concern:

- Each year on average (2005-2009), 168 pedestrians and 24 bicyclists are killed in collisions with motor vehicles on North Carolina roads, with many more seriously injured.⁷
- North Carolina is ranked as one of the least safe states for walking (41st) and bicycling (44th).⁴
- 12.3% of all traffic fatalities in North Carolina are bicyclists and pedestrians.⁷
- There are 10.0 bicycle fatalities per 10,000 daily bicyclists (which ranks sixth worst in the country) and 9.0 pedestrian fatalities per 10,000 daily pedestrians (which ranks 10th worst in the country).⁷
- During the five-year period from 2005 to 2009, a total of 4,824 bicycle-motor vehicle crashes and 12,419 pedestrian-motor vehicle crashes were reported to North Carolina authorities.⁷

Improving Safety in North Carolina

Separate studies conducted by the Federal Highway Administration and the University of North Carolina Highway Safety Research Center demonstrate that installing pedestrian and bicycle facilities directly improves safety by reducing the risk of pedestrian-automobile and bicycle-automobile crashes. Furthermore, according to the aforementioned survey, 70% of respondents said they would walk or bicycle more if safety issues were addressed, citing a lack of bicycle and pedestrian facilities as the top issues.⁶

Average yearly fatalities due to motor vehicle collisions (2005-2009). This represents 12.3% of all traffic fatalities in North Carolina.⁴



Safest States for Bicycling

- | | |
|-------------------|---------------------------|
| 1. South Dakota | 26. Virginia |
| 2. Vermont | 27. Arizona |
| 3. Oregon | 28. Kansas |
| 4. Nebraska | 29. New Hampshire |
| 5. North Dakota | 30. Connecticut |
| 6. Colorado | 31. New York |
| 7. Montana | 32. Kentucky |
| 8. Wyoming | 33. Michigan |
| 9. Idaho | 34. Maryland |
| 10. Washington | 35. Ohio |
| 11. Massachusetts | 36. Indiana |
| 12. Wisconsin | 37. New Jersey |
| 13. Rhode Island | 38. Nevada |
| 14. Minnesota | 39. Oklahoma |
| 15. Utah | 40. Texas |
| 16. Hawaii | 41. Georgia |
| 17. Maine | 42. Tennessee |
| 18. Alaska | 43. Louisiana |
| 19. Pennsylvania | 44. North Carolina |
| 20. California | 45. Florida |
| 21. Illinois | 46. Alabama |
| 22. West Virginia | 47. Arkansas |
| 23. Missouri | 48. Delaware |
| 24. Iowa | 49. South Carolina |
| 25. New Mexico | 50. Mississippi |

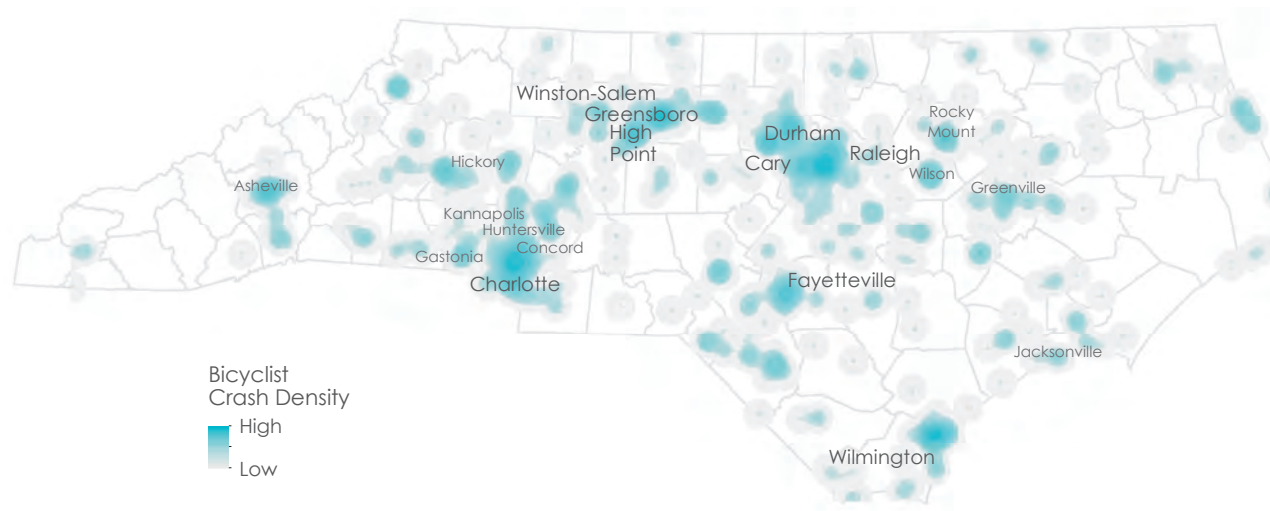
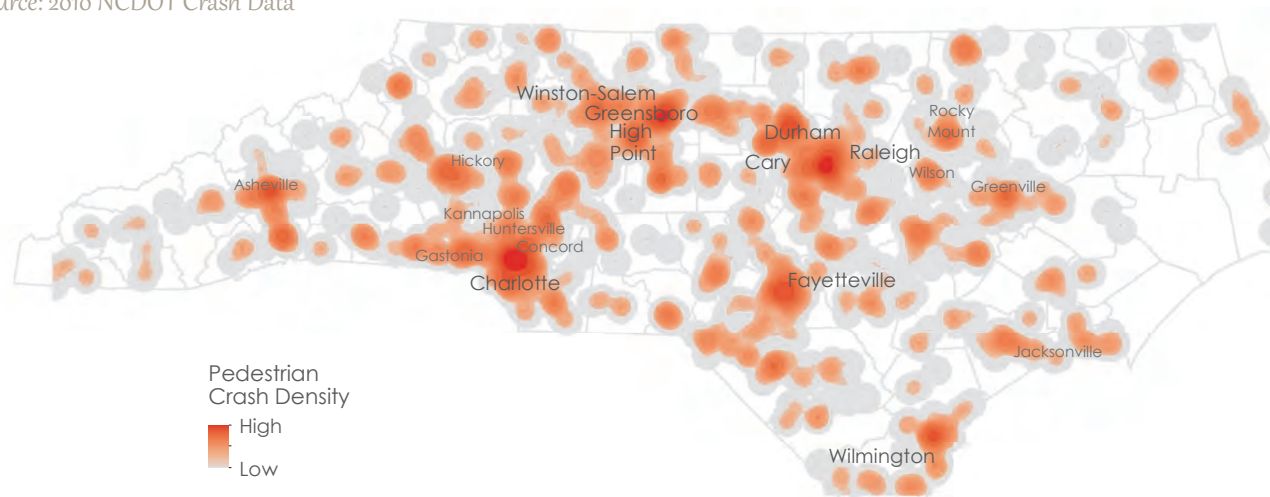
Safest States for Walking

- | | |
|-------------------|---------------------------|
| 1. Vermont | 26. Indiana |
| 2. Nebraska | 27. West Virginia |
| 3. Alaska | 28. Rhode Island |
| 4. Wyoming | 29. Virginia |
| 5. Iowa | 30. Kentucky |
| 6. South Dakota | 31. New Jersey |
| 7. North Dakota | 32. Michigan |
| 8. Maine | 33. Missouri |
| 9. Massachusetts | 34. California |
| 10. Minnesota | 35. Oklahoma |
| 11. New Hampshire | 36. Tennessee |
| 12. New York | 37. Nevada |
| 13. Wisconsin | 38. Arkansas |
| 14. Washington | 39. Maryland |
| 15. Idaho | 40. Delaware |
| 16. Kansas | 41. North Carolina |
| 17. Montana | 42. Texas |
| 18. Pennsylvania | 43. New Mexico |
| 19. Oregon | 44. Arizona |
| 20. Colorado | 45. Georgia |
| 21. Illinois | 46. Mississippi |
| 22. Connecticut | 47. Alabama |
| 23. Utah | 48. South Carolina |
| 24. Hawaii | 49. Louisiana |
| 25. Ohio | 50. Florida |

◀ Tables from the 2012 Benchmarking Report by the Alliance for Biking & Walking. Ranking was developed using a rough approximation of exposure levels that takes both population and cycling levels into account. Note that exposure data are rough approximations and fatalities can vary greatly from year to year.

2010 Pedestrian and Bicycle Crash Density Maps, NC

Source: 2010 NCDOT Crash Data*



*Maps show geographic density of pedestrian and bicycle crashes in 2010



Health

Health Trends and Challenges in North Carolina

North Carolina's transportation system is one of the most important elements of our public environment, and it currently poses barriers to healthy living through active transportation. In 2012, NCDOT's Board of Transportation revised its mission statement to include "health and well-being" and passed a "Public Health Policy," which declares the importance of a transportation system that supports positive health outcomes. Below are some key trends and challenges related to health and transportation in North Carolina:

- 65% of adults in North Carolina are either overweight or obese.⁸ The state is also ranked 5th in the nation for childhood obesity.⁹
- Recent reports have estimated the annual direct medical cost of physical inactivity in North Carolina at \$3.67 billion, plus an additional \$4.71 billion in lost productivity. However, every dollar invested in pedestrian and bicycle trails can result in a savings of nearly \$300 in direct medical expenses.¹⁰

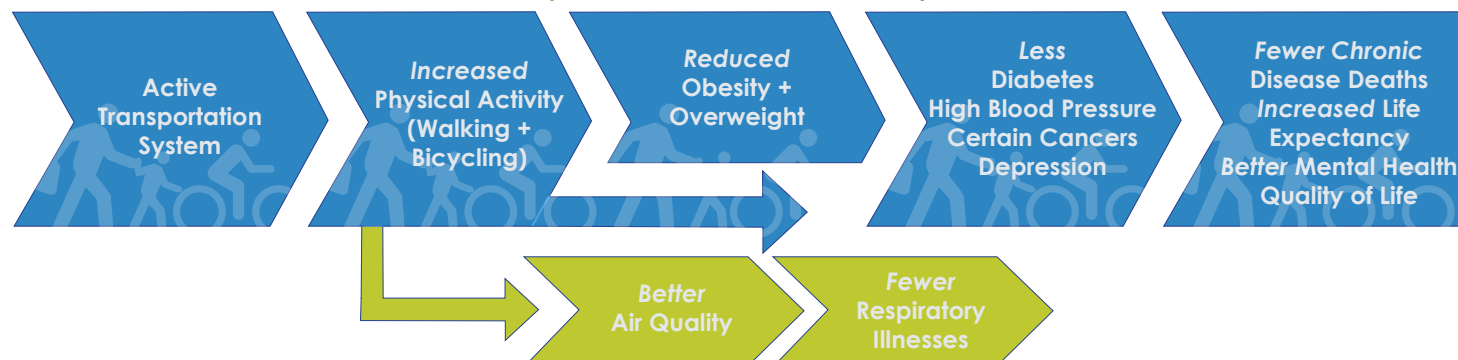
- Of North Carolinians surveyed, 60% would increase their level of physical activity if they had better access to sidewalks and trails.⁸
- A Charlotte light rail study found that residents who switched to using light rail weighed an average of six and a half pounds less than those who continued to drive to work.¹¹

Better Health through Active Transportation

Using active transportation to and from school, work, parks, restaurants, stores and other routine destinations is one of the best ways that children and adults can lead measurably healthier lives. Increasing one's level of physical activity through walking and bicycling reduces the risk and impact of cardiovascular disease, diabetes, chronic disease, and some cancers. It also helps to control weight, improves mood, and reduces the risk of premature death.¹²

In recent years, health professionals and advocates have become new partners in promoting and planning for active transportation.

Active Transportation: Pathway to Health





Economics

Economic Trends in North Carolina

Facilities for bicyclists and pedestrians generate economic returns through improved health, safety, and environmental conditions, raise property values, and attract visitors. Below are some key economic trends related to walking and bicycling in North Carolina:

- North Carolina is the 6th most visited state in the United States and 2011 was a record year as visitors spent \$18 billion, many of whom partook in activities related to walking or biking.¹³
- In North Carolina's Outer Banks alone, bicycling is estimated to have an annual economic impact of \$60 million and 1,407 jobs supported from the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area.¹⁴
- The annual return to local businesses and state and local governments on bicycle facility development in the Outer Banks is approximately nine times higher than the initial investment.¹⁴
- Walking and biking are also economically efficient transportation modes. Many North Carolinians cannot afford to own a vehicle and are dependent on walking and biking for transportation (6.7% of occupied housing units in North Carolina do not own a vehicle).¹⁵



These economic estimates were derived under the assumption of adding 300 miles of greenway statewide. The full economic impact analysis can be found in the full document, in Appendix 10.5.

Gas Prices & Bicycling for Transportation

The bicycle is becoming a more popular personal transportation vehicle as worldwide population grows; or more people move to cities and communities become more densely populated. In addition, the rising gas prices of recent years have had an impact on Americans at all income levels. Although this increase cannot be attributed to gas prices alone, 2008 was the year with the highest recorded rate of increased bicycle commuting in the last decade in the United States. During the 2008 gasoline price spike, many bicycle shops benefited from this rise in bike commuting. In August 2008, Bikes Belong surveyed more than 150 bike retailers from 40 states. Seventy-three percent of retailers said they were selling more transportation-related bicycles. Nearly every shop (95%) had customers citing high gas prices as a reason for their purchase, and four in five retailers said gas prices were helping them sell more bikes.¹⁶ According to a 1997 survey of bike commuters, 46% said they ride to save money on gasoline.¹⁷ **During the first quarter of 2009, more bicycles were sold in the United States than cars and trucks combined.** Around 2.6 million bicycles were purchased during the quarter, outselling the 2.5 million cars and trucks purchased in the same period. Worldwide production of bicycles in 2012 outnumbered automobile production 130 million units to 50 million units.

Revitalizing North Carolina's Small Town Main Streets

The North Carolina Department of Commerce's Main Street Program assists small towns in making improvements to reestablish their downtowns as thriving economic centers. **Since the Program's start in 1980, towns have experienced a total gain of \$1.66 billion in new investment and 14,600 new jobs.**¹⁸ While the Main Street Program takes a wide approach to improving downtowns, many plans completed through the Program include initiatives to make streets more bicycle and pedestrian friendly. Towns have focused on improving sidewalk connectivity, creating marked walking routes, installing bike lanes, and implementing street-level design improvements for a more enjoyable walking experience. Transforming downtown shopping into an enjoyable, active experience has helped towns attract consumer spending that might previously have occurred at larger shopping centers outside their tax base and improve downtown property values.



◀ The Town of Clayton is one of many Main Street Program successes. Among recent projects, they designed and built an all-brick walkway to the Civil War Trails marker. Photo: <http://downtownclayton.blogspot.com/>

Summation of Estimated Economic Impacts Associated with Investment in Bicycle and Pedestrian Infrastructure within the State of North Carolina

Economic Impact Category	Estimated Economic Impact	Beneficiaries
Economic stimulus from upfront construction	\$174M supporting 1,600 jobs	The entire State economy
Economic stimulus from increased tourism activity	\$128M supporting 1,600 jobs	The entire State economy
Direct use value from usage of bicycle and pedestrian infrastructure	\$228M in new direct use value	State residents who use the new bicycle and pedestrian infrastructure
Health care cost reduction from usage of bicycle and pedestrian infrastructure	\$76M in health care cost reduction	State residents who use the new bicycle and pedestrian infrastructure, and the health care cost pools to which they belong
Commuting gains from increased usage of bicycle and pedestrian infrastructure	4.9M fewer car miles driven, \$167,000 in emissions cost avoidance, \$800,000 not spent on gasoline, \$325,000 in congestion cost avoidance	Drivers within the State, as well as the State as a whole
Property value gains from proximity to bicycle and pedestrian infrastructure	\$64M one-time increase in property value, \$640,000 annual increase in property tax revenues	Property owners, municipalities and school districts



These estimates are calculated under the assumption of an increase of 300 miles of greenway infrastructure. See Appendix 10.5 for more information.

Source: Econsult Corporation (2012)



Environment

Stewardship of North Carolina's Environment

Stewardship, for the purposes of this Plan, addresses the impact that transportation decisions (both at the government/policy level and individual level) can have on the land, water and air that North Carolinians and tourists enjoy. Environmental sensitivity and resource protection is one of the goals of WalkBikeNC. Below are some key trends and challenges related to stewardship and transportation in North Carolina:

- Even a modest increase in walking and bicycling trips (in place of motor vehicle trips) can have significant positive impacts. For example, replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.¹⁹
- According to the National Association of Realtors and Transportation for America, 89% of Americans believe that transportation investments should support the goal of reducing energy use.²⁰
- North Carolina's 2009-2013 Statewide Comprehensive Outdoor Recreation Plan (SCORP) found "walking for pleasure" to be the most common outdoor recreational activity, enjoyed by 82% of respondents, and bicycling by 31% of respondents.²¹

Stewardship and Transportation

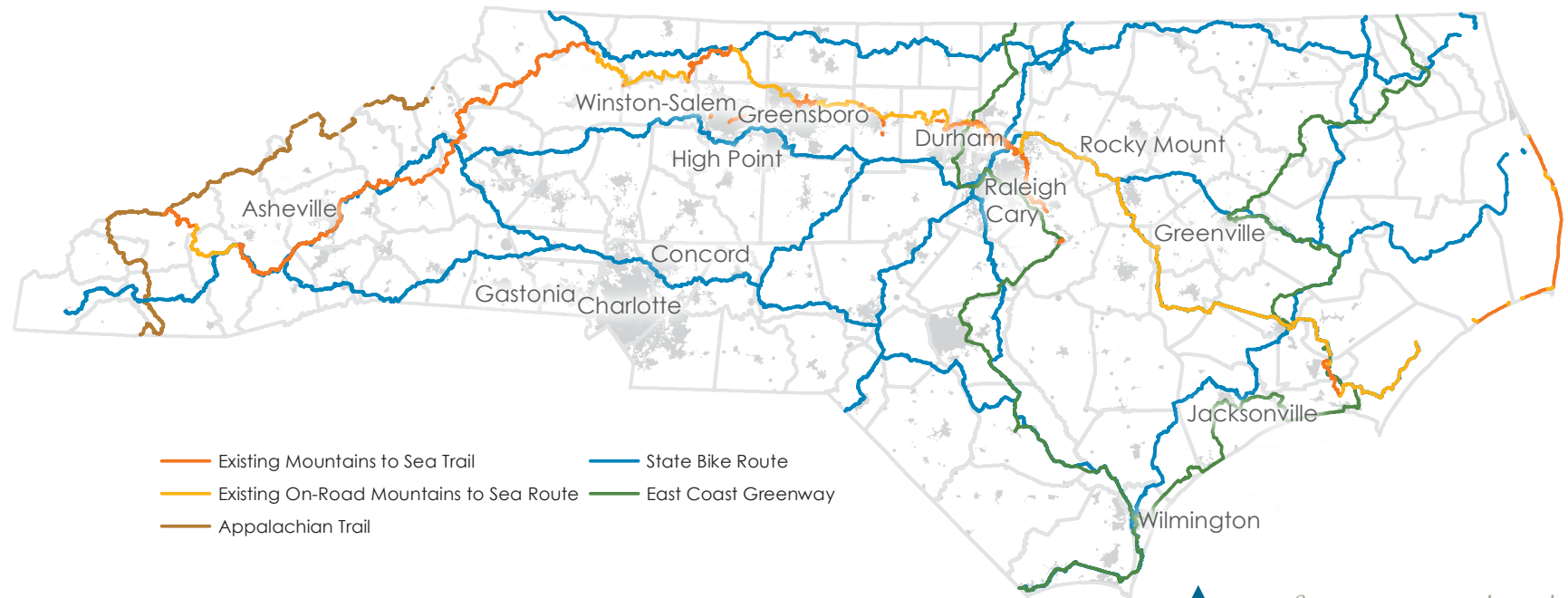
Stewardship is represented in many ways across North Carolina from transportation planning to statewide trails, recreation areas, and environmental education. Walking and bicycling trails through North Carolina landscapes, seen on page 17, enable tourism, recreation, and environmental education opportunities.

Transportation, land use, and resource protection issues must be considered together when planning and designing North Carolina's future transportation system. Environmental education and other stewardship opportunities will be promoted in tandem with the Statewide Pedestrian and Bicycle Plan by involving the expertise and perspective of NC Division of Parks and Recreation and NC Department of Environment and Natural Resources as planning partners.

Conservation Planning Tool

The Conservation Planning Tool (CPT), developed by the North Carolina Department of the Environment and Natural Resources (DENR), has already been used in comprehensive, long-range transportation planning in North Carolina. This tool identifies important natural heritage features such as unique landscapes, farmlands, and high-quality forests, etc. and is helping planners make more informed land use and transportation decisions.

This type of cross-collaboration between NCDENR and North Carolina's transportation stakeholders will be critical to fulfilling NCDOT's mission of, "Connecting people and places safely and efficiently, with accountability and **environmental sensitivity** to enhance the economy, health, and well-being of North Carolina."



▲ Map of existing statewide trails and bicycle routes, which serve as economical, recreational, and stewardship drivers.

▶ Promoting North Carolina's natural beauty to potential tourists will support economic competitiveness while enhancing stewardship.



Needs and Metrics

The Need and Demand for Improved Walking and Bicycling Conditions

North Carolina has both high demand and a strong need for improved walking and bicycling infrastructure, policies and programs. The need and demand can be expressed as follows:

- North Carolinians need and strongly desire the construction of more sidewalks, off-road trails (greenways), and on-road bicycle facilities within all types of communities (rural, suburban and urban) throughout our state.
- Our state and local governments have not invested enough in pedestrian and bicycle infrastructure. In fact, the historic level of investment does not even match the current usage (travel mode share) occurring throughout the state.
- Too many North Carolina pedestrians and cyclists are being killed and seriously injured annually.
- We are not doing enough to educate North Carolina pedestrians, cyclists and motorists on how to share roadways throughout the state.
- North Carolinians can become healthier if we integrate walking and bicycling into daily active living.
- North Carolina can become more prosperous by accommodating pedestrian and bicycle activity in all communities, regardless of size and location.
- North Carolina's natural and cultural resources can be more effectively conserved and managed by promoting walking and bicycling.
- State agencies and local governments should work with the private sector to engage and involve North Carolinians in the future development of statewide pedestrian and bicycle facilities and programs.



Walking and Bicycling Infrastructure is Underfunded and Incomplete

It is very difficult to locate any community within North Carolina that has a complete, interconnected, contiguous and fully functional walking and bicycling network, especially as compared with our state's roadway and highway network. The vast majority of ped/bike networks in cities like Raleigh, Charlotte, Winston-Salem, Asheville and Wilmington, just to name a few communities, are nowhere near complete. For those who want to walk or bike, this is the equivalent of getting into an automobile to make a trip, but being unable to complete the trip because roads simply ended after you pulled out of your neighborhood. That is the reality that pedestrians and cyclists face throughout North Carolina.

North Carolina's walking and bicycling infrastructure has been underfunded for decades and our state has fallen significantly behind customer demand for facilities and programs. While North Carolina's population has swelled and communities have rapidly changed to absorb the growth, investment in pedestrian and bicycle infrastructure has significantly lagged behind demand.

Using the *NCDOT 2040 Plan* as the basis for determining financial need from four perspectives--whether modal needs are current or accruing in the future; by investment goal (infrastructure health, mobility, or safety); by system tier (Statewide, Regional, or

Subregional); and resulting metric Level of Service (LOS)--the lack of investment in pedestrian and bicycle transportation is more clearly defined. For example, **the 2040 Plan highlights a total of \$773 million of pedestrian and bicycle funding need for the next 30 years.** Current deficiencies (existing pedestrian and bicycle needs, sometimes referred to as backlogged needs) include \$632 million for 30 years (2040 Plan) (\$21.07 million per year). This NCDOT-generated value reflects what is needed to meet target Level of Service (LOS) to accommodate reasonable modes of transportation.

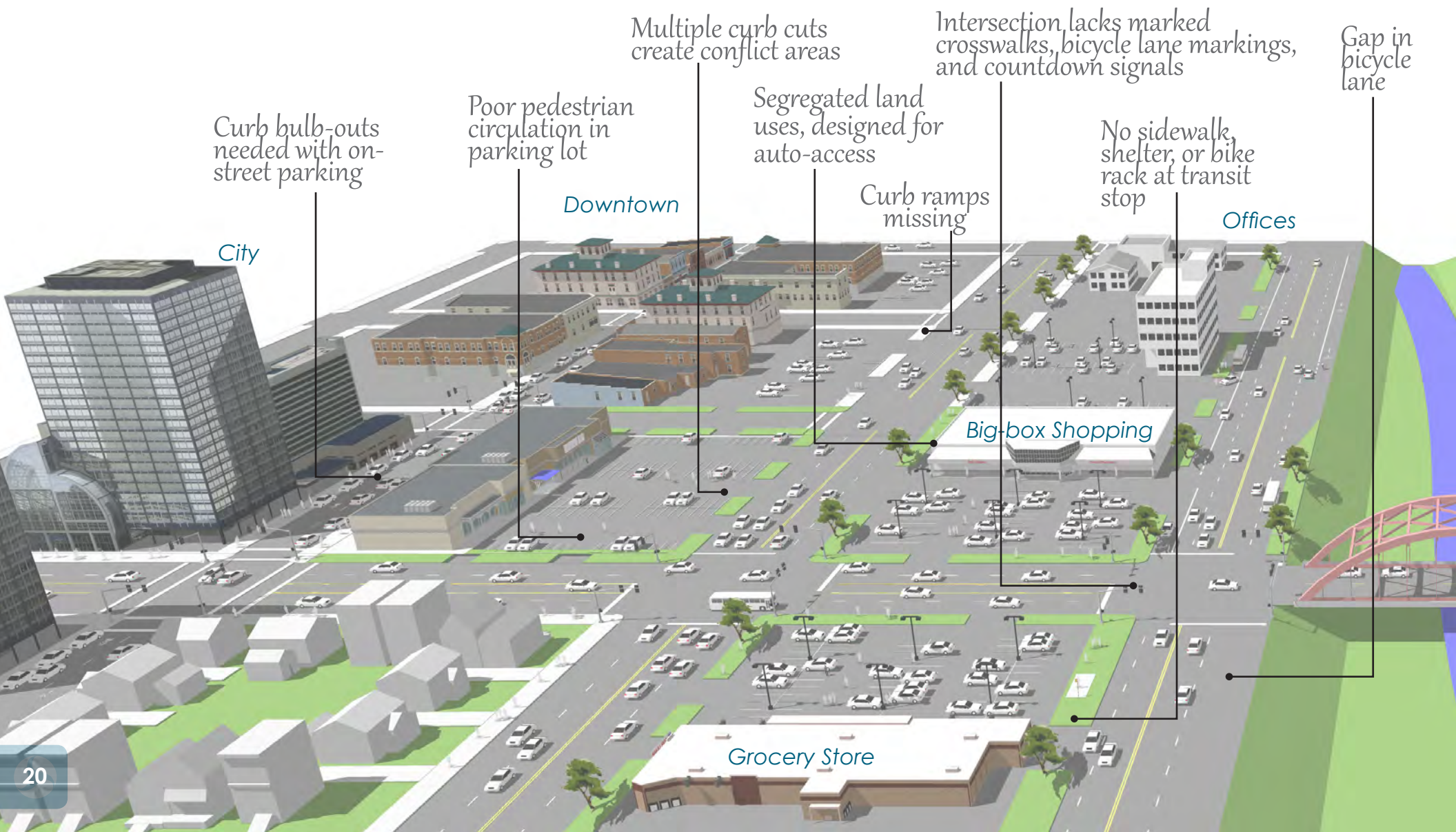
Additionally, the **Metropolitan Planning Organizations and Rural Planning Organizations have submitted needs for a five-year period, 2018-2022, that total \$390 million of financial need for walking and bicycling (\$78 million per year).** This summarizes an estimate of need defined and submitted by local governments from across the State as a result of detailed transportation planning.

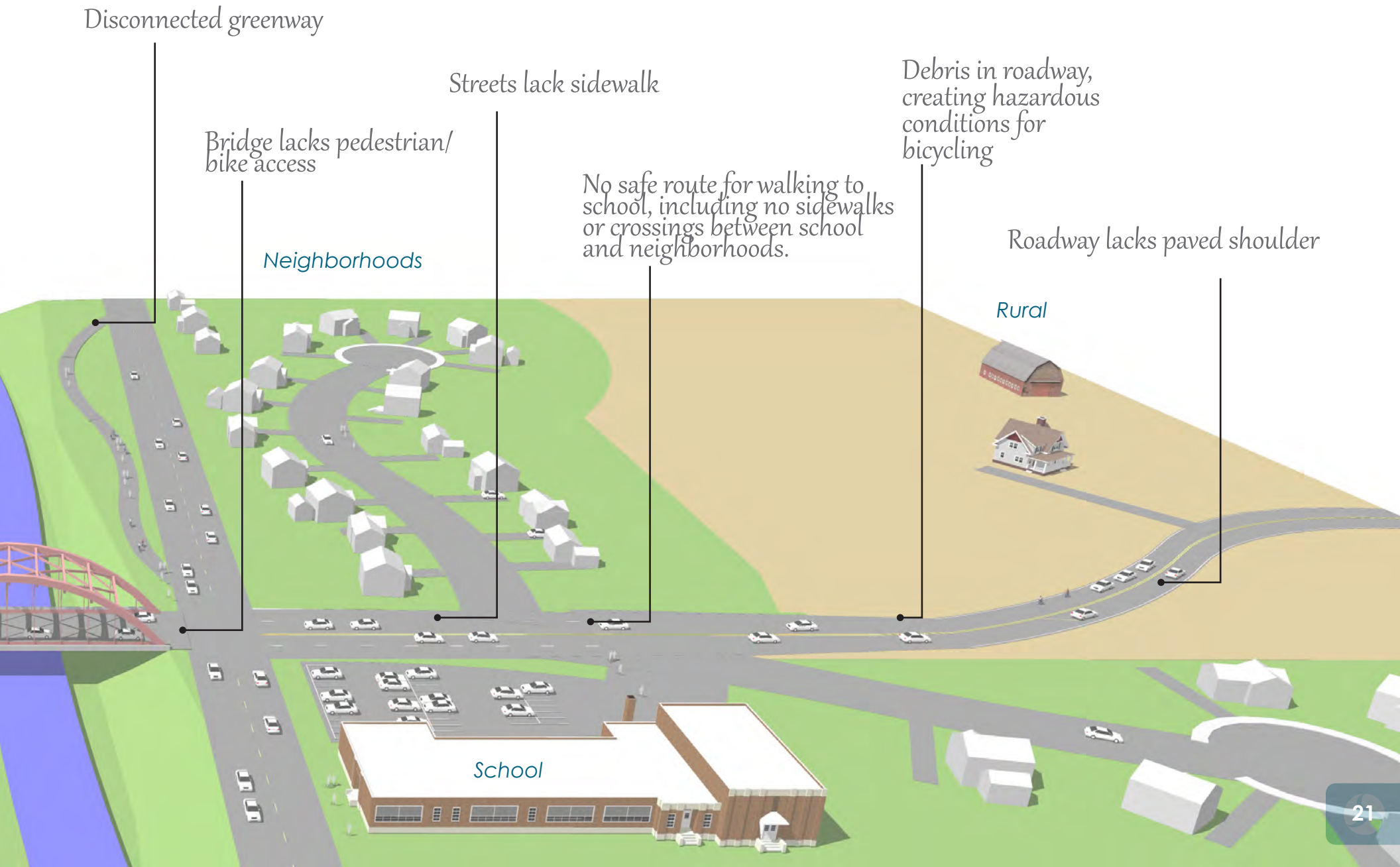
Bicycle and Pedestrian Needs (Target LOS) (billions of 2011 dollars)			
Investment Goal	Current Deficiencies	Accruing	30-Year Total
Mobility	0.32	0.07	0.39
Safety	0.32	0.07	0.39
Total	0.63	0.14	0.77

Bicycle and Pedestrian needs from NCDOT's 2040 Plan

TRANSPORTATION CHOICES IN NC TODAY: THE AUTOMOBILE

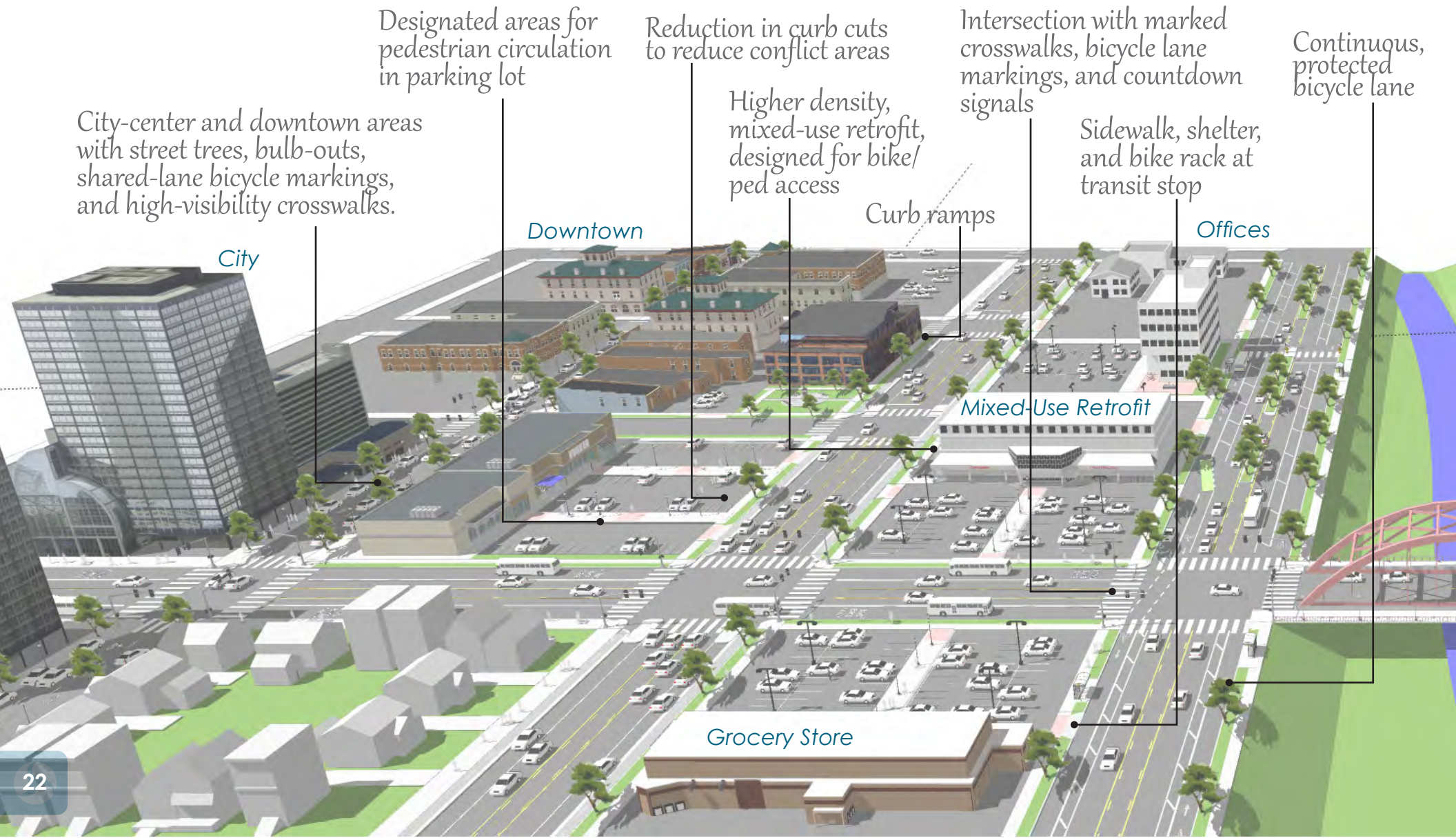
This graphic illustrates how most urban, suburban, and rural areas in North Carolina are designed primarily for the automobile. Driving an automobile is currently the most convenient mode of travel for many North Carolinians because our roadway network is designed for driving and our land uses tend to be segregated and separated by long distances, making walking and bicycling from origin to destination challenging. North Carolina currently lacks a contiguous, interconnected and consistent network of pedestrian and bicycle facilities and services that would encourage walking and bicycling as a viable choice for transportation.

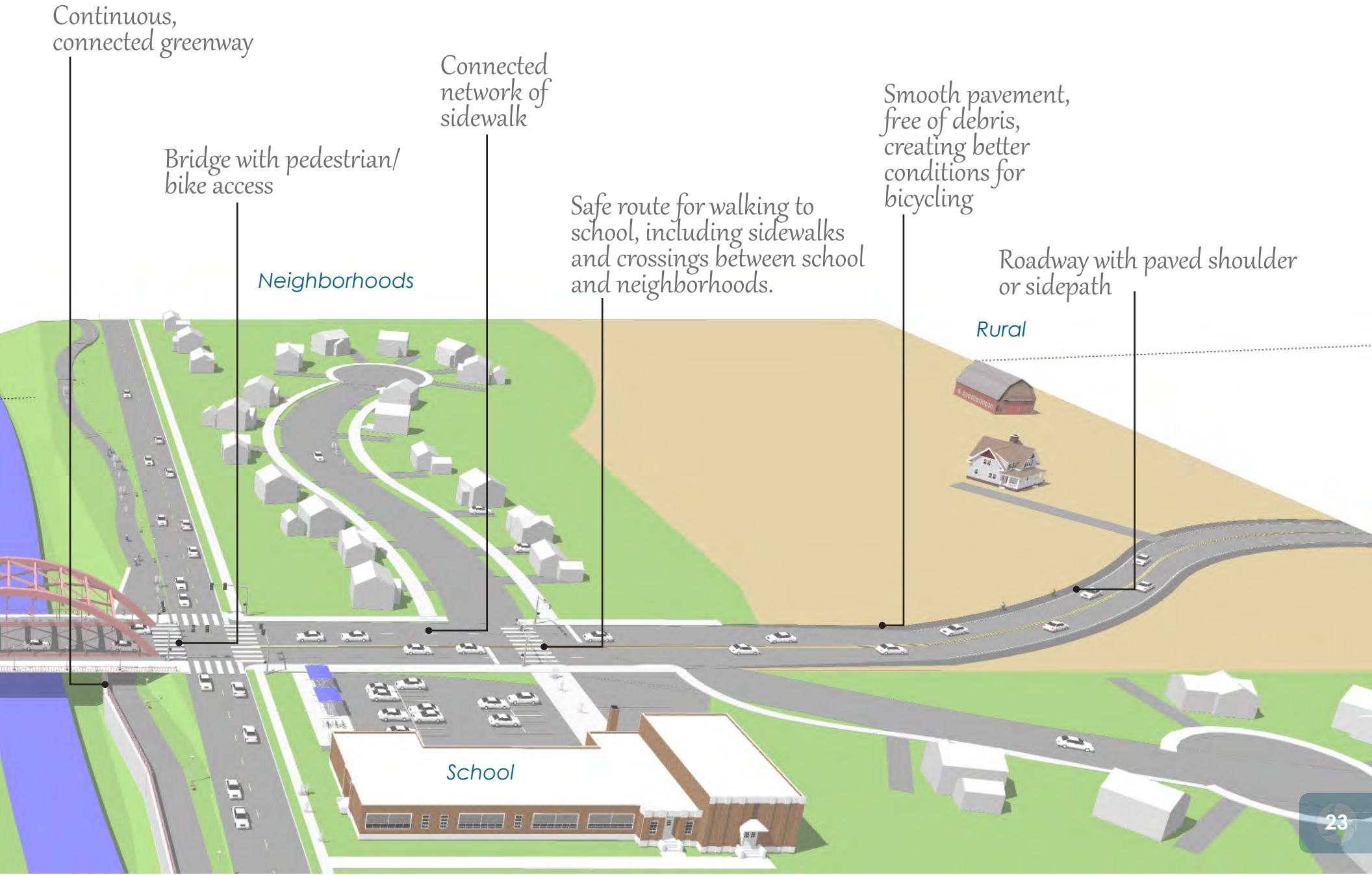




NEW TRANSPORTATION CHOICES FOR NC: CUSTOMER SERVICE FOR ALL ROADWAY USERS, INCLUDING PEDESTRIANS AND BICYCLISTS

This graphic illustrates how most urban, suburban, and rural areas in North Carolina can be retrofitted to better serve all of NCDOT's transportation 'customers'. In addition to the transportation project examples below, issues with land use and trip distances will also need to be addressed, mostly on the local and regional level. This could include a greater mix of land uses, higher densities of development, infill development, and reinvestment in NC's downtown areas. Land use and development strategies such as these serve to not only reduce infrastructure costs and preserve open space, but they also shorten daily trip distances, making walking and bicycling a more viable choice for everyday transportation.





Continuous,
connected greenway

Bridge with pedestrian/
bike access

Neighborhoods

Connected
network of
sidewalk

Safe route for walking to
school, including sidewalks
and crossings between school
and neighborhoods.

Smooth pavement,
free of debris,
creating better
conditions for
bicycling

Roadway with paved shoulder
or sidepath

Rural

School



We Can Improve Safety for Pedestrians and Bicyclists in North Carolina

North Carolina is one of the least safe states in the nation to walk or bike. Thirteen percent of all traffic fatalities are pedestrians and cyclists. Our state is incurring, on average, 10.0 bicycle fatalities per 10,000 daily bicyclists (sixth worst in country); and 9.0 pedestrian fatalities per 10,000 daily pedestrians (10th worst in country).⁷ **The majority of the pedestrian and bicycle collisions occur inside municipal limits, and minority populations make up a disproportionate share of these accidents and fatalities.**

The 2011 Bicycle and Pedestrian Safety Survey found that 80% of 16,000 respondents felt that bicycling is currently somewhat or very dangerous. Most importantly, respondents felt that the lack of facilities, such as sidewalks, greenways and on-road bicycle facilities is making it dangerous to walk and bike throughout North Carolina.⁶

In addition to unsafe environments, North Carolina is not doing enough to encourage motorists to share the road, and to be watchful for pedestrians and cyclists.



North Carolinians Can Become More Healthy Through Active Living

The health of North Carolinians is greatly influenced by where and how we live, work, learn and play. The World Health Organization declared that "health is a state of complete physical, mental and social well-being and not merely the absence of disease or illness." To



Walking and bicycling as normal parts of daily transportation can greatly improve health.

maintain health, it is important for North Carolinians to be active on a daily basis. Federal and North Carolina policies and programs support creating active living environments in all communities throughout the state.

The need and demand to transform our towns and cities into active living communities is great. North Carolina is the 32nd healthiest state and 36th in premature death. Less than half of adult North Carolinians were performing the minimum recommended amount of weekly physical activity necessary to maintain proper health.²² Active living is critically important, as changes in land use and transportation during the past four decades have been a contributor to declining health. In North Carolina, 65% of adults are either overweight or obese; North Carolina is also ranked fifth in the nation for high levels of childhood obesity.⁹ Physical inactivity is very costly to our state, resulting in medical costs of more than \$3.67 billion and loss of productivity in excess of \$4.71 billion.¹⁰

An estimated 42% of North Carolinians who commute daily complete a trip of less than 10 miles. Nationally, 40% of all trips (commute and non-commute) are less than two miles, which is a very reasonable biking and walking distance.⁴ Almost 11% of all trips in North Carolina are walking trips.²³ Additionally, there are segments of North Carolina's population for whom walking and bicycling may be the only mode of travel. Approximately 6.7% of occupied housing units in North Carolina do not own a vehicle and therefore are dependent on walking, biking, and public transportation.¹⁵



We Can Improve North Carolina's Economy through Walking and Bicycling

Making North Carolina's communities more walkable and bikeable will help boost economic development, create jobs, reduce health care costs and result in a significant return on public and private dollars invested. North Carolina must remain economically competitive by marketing and promoting our greatest assets, the quality of life that is found in all of our communities, large and small.

North Carolina needs to create jobs for its citizens in order to grow our economy. The construction industry in North Carolina is one of the most important to our economy. It employs a diversity of people with respect to ethnicity, gender and socio-economic condition. The construction industry also supports numerous small businesses across the state. Building a network of pedestrian and bicycle facilities throughout North Carolina, as recommended by this Plan, provides tremendous opportunity for small, diverse businesses to sustain jobs and create thriving enterprise.



▲ Providing quality, interconnected infrastructure is critical to meeting the needs of all pedestrians and bicyclists, but it can also translate into jobs related to construction and tourism.

Another way to grow our economy is to become an attraction for tourism, which is the fastest growing sector of North Carolina's economy. North Carolina has a chance to become a mecca for outdoor tourism, due to our geographical location, moderate climate, rich history, spectacular natural resources and hospitable citizens. One way to fulfill this opportunity is to make our communities more walkable and bikeable. In 2011, North Carolina's tourism revenue grew to \$17 billion, with more than 37 million overnight visitors.¹³ Building more pedestrian and bicycle infrastructure will dramatically increase the number of bicycle tourists to our state and increase revenues and spending within our state. This Plan estimates that more than \$168 million in new revenues could occur annually, supporting approximately 1600 new jobs and generating an additional \$1 million in tax revenues.

North Carolina spends a significant amount of money on health care. A more walkable and bikeable North Carolina can reduce the amount spent on direct health care, treatment of chronic illness, worker's compensation claims, administrative costs and worker productivity. This Plan estimates that North Carolina can save \$76 million annually in health care costs by investing in walking and bicycling infrastructure and programs.

Making our communities more walkable and bikable will catalyze more cycling and walking trips and reduce the number of vehicle miles traveled. **This Plan estimates that we can reduce vehicle miles traveled by 4.9 million miles through an investment in walking and bicycling infrastructure.** This will reduce the amount of gasoline purchased and result in transportation cost savings of more than \$1 million annually.



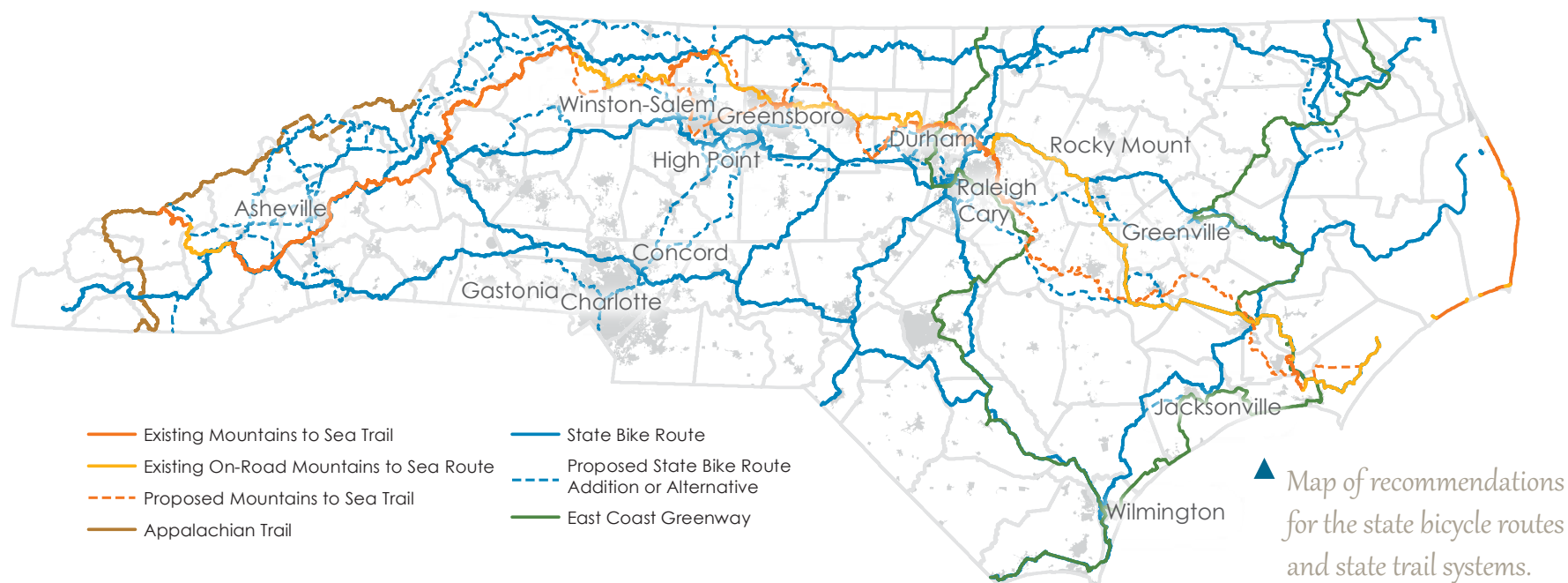
We Can Be Better Stewards of North Carolina's Environment

Protecting and conserving North Carolina's air, land and water resources is the most important factor in maintaining the quality of living and economic competitiveness of our state. Our natural resources are irreplaceable and must be properly managed for future generations to enjoy and prosper from. Investing in pedestrian and bicycle infrastructure and programs is one way in which we can become better stewards of North Carolina's environment.

We can reduce the impact that transportation systems have on North Carolina's environment by reducing our dependency on automobile travel and offering citizens the choice to walk or bike. This will result in a reduction in transportation vehicle emissions from automobiles. The automobile industry is also one of the greatest generators of solid waste, much of which is never recycled. Reducing our long term dependence on automobiles will reduce the amount of solid waste generated.

Promoting walking and bicycling will also lead to a more compact form of growth. North Carolina needs to accommodate more than 2 million people across our state within the next 20 years. How we accomplish this is important. By adopting policies and programs that support walking and bicycling, we can shrink the amount of land needed to accommodate such growth, lessen our impact on air, land and water resources and promote more affordable quality living.

North Carolina's parks, open space and greenways are some of the most beloved and cherished landscapes in our communities. There is a need to link together the community greenspaces that have been established during the past three to four decades. These interconnected networks of



greenspace can serve multiple uses and provide a wide variety of benefits to citizens. Networks of greenspace can help to conserve natural resources, they can simultaneously be used as corridors for commuting, while at the same time mitigate impacts associated with flooding. North Carolina needs a comprehensive plan for its greenspace resources, and this Plan recommends a Greenprint Plan for North Carolina (a plan defining the protection of open space and greenways).

Level of Service (LOS) (defines how well a mode of transport meets public needs)

In 2012, as part of the 2040 Plan, NCDOT determined

the current statewide LOS for the bicycle and pedestrian system to be LOS D, based on a bicycle/pedestrian index developed by the Division of Bicycle and Pedestrian Transportation. The 2040 Plan states that if current funding levels remain the same, the LOS would be F by 2022. Measures used to determine the LOS score were commute mode share, crash totals/rates, percentage of roadways with paved shoulders, percentage of municipal population with pedestrian/bicycle plans, and health (physical activity/overweight) percentages.

Ultimately, pedestrians and bicyclists do not have a viable, equivalent quality transportation choice other than the use of the automobile in the current statewide transportation system. A distinct current

and accruing need exists for safety, mobility, and infrastructure health across North Carolina in all three geographic tiers: urban, suburban, and rural. There is a lack of a consistent, connected, accessible, and safe pedestrian and bicycle network across the state, region, and cities of North Carolina, making walking and bicycling a difficult choice in transportation for most places across the state. In addition, pedestrians and bicyclists are more limited by distances to key destinations, a factor largely influenced by local land use decisions.

Pedestrians and bicyclists include a wide range of types, ages, capabilities, and skill levels. To effectively deliver pedestrian and bicycle transportation to North Carolinians, NCDOT must consider the range of pedestrians (See Chapter 3) and bicyclists (See Chapter 4). **A customer-service approach that addresses the specific needs and requirements of the broad range of pedestrians and bicyclists is necessary for NCDOT to deliver bicycle and pedestrian transportation effectively to North Carolinians.**

Each North Carolina transportation customer faces basic decisions for travel to destinations that are influenced by a number of factors. A motorist is not as influenced by distance because an automobile can move faster and go farther with fewer obstacles to travel, and the roadway network is interconnected and continuous, easily accessing destinations. A pedestrian or bicyclist is influenced by distance traveled and lack of interconnected facilities due to travel speed, capability of the cyclist or pedestrian, and the fact that the network of walkways and bikeways

often does not exist in many places throughout North Carolina.

A comprehensive approach that goes beyond facilities is needed to deliver to the pedestrian and bicyclist customers. As the 2040 Plan recommends, NCDOT will continue pursuing its mission of “connecting people and places safely and efficiently, with accountability and environmental sensitivity to enhance the economy, health, and well-being of North Carolina.” Adhering to the NCDOT mission statement and delivering quality pedestrian and bicycle accommodations includes both quantitative and qualitative metrics.

To determine if pedestrian and bicyclist needs are being met, a more comprehensive approach to metrics and performance measures is needed to build upon current LOS measurements. This approach should address the needs outlined above at both a system-wide (statewide/regional) level and project-specific (local) level. In many cases, this will be possible with additional data collection. The following performance metric guide was developed utilizing precedent guidance from other states.

Strategies for Implementing WalkBike NC

A collaborative, efficient, and customer-driven effort is required by NCDOT and its partners to make North Carolina a premiere state for walking and bicycling, thereby improving health, safety, transportation efficiency, economic well-being, and stewardship. The following five principles, with their associated objectives and strategies, outline the key investments and actions that North Carolina's public and private sectors should undertake to implement WalkBikeNC. A more detailed list of focused action steps are provided in Appendix 10.10 of the full version of the WalkBike NC Plan.

In order to measure the success of WalkBike NC, state agencies and local governments will be asked to improve customer service and track the progress of project delivery and program implementation. To accomplish this, evaluation feedback mechanisms will be implemented including better communications with customers and annual progress reports. The percentage of STIP projects that are completed or not completed in a timely manner will be reported. User counts will be taken throughout the state to gauge pedestrian and bicycle mode share. Customers will be surveyed to ensure that the vision and goals of WalkBike NC are being achieved.

This Plan's principles (mobility, safety, health, economy, and environment) are used to organize related objectives, strategies and performances measures on the following pages. ▼





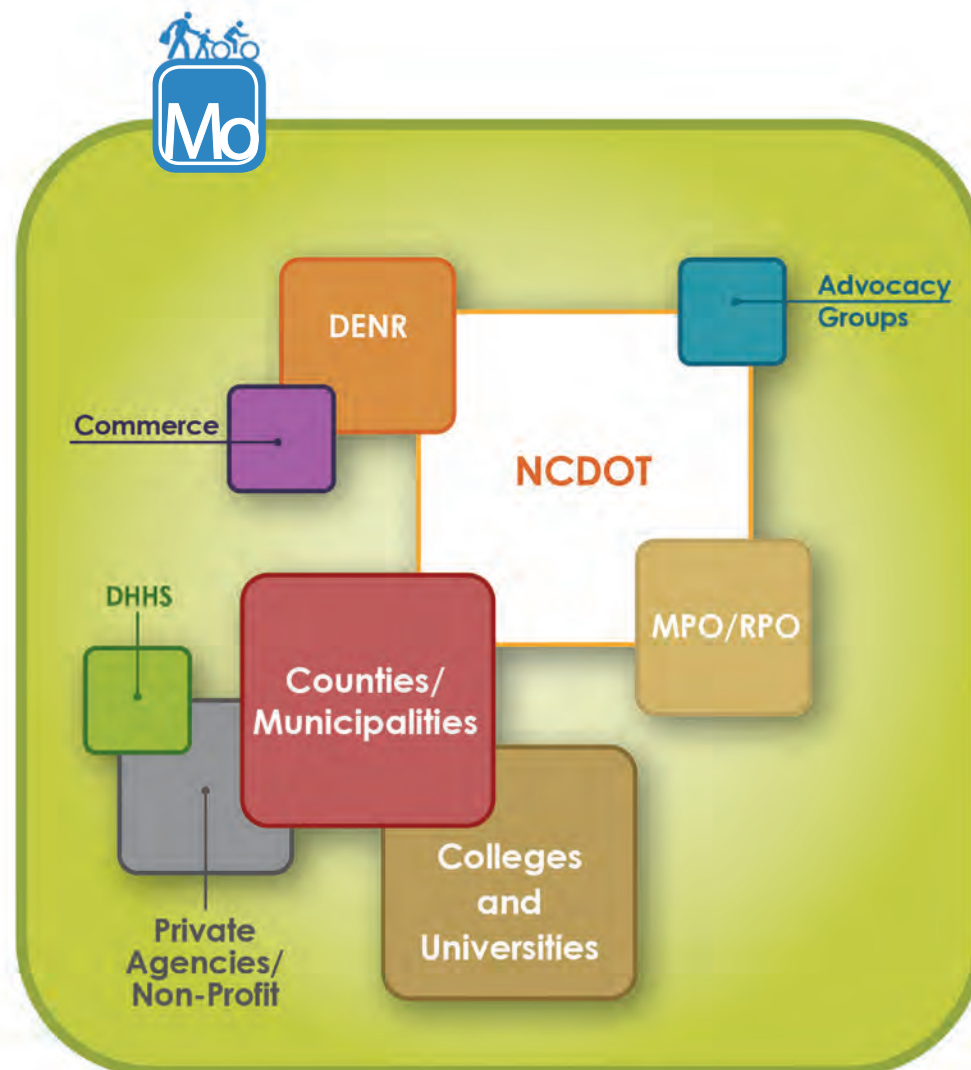
Principle One:

Expand Walking and Bicycling Network

NCDOT will work with public and private sector partners to improve the quality of transportation choice for pedestrian and bicycle travel throughout North Carolina by expanding and connecting the local, regional and intrastate network of bicycle facilities, supporting the expansion of community-oriented pedestrian facilities, providing better access to transit, and meeting the needs of the disabled in all project work. NCDOT, in partnership with local governments and the private sector, will work collaboratively to streamline pedestrian and bicycle project delivery through a multi-prong approach that focuses on identifying available funding, reducing encumbrances, and implementing the NCDOT Complete Streets Policy.

NCDOT will update the Department of Bicycle and Pedestrian Transportation planning grant program to modernize its function and purpose, create a new category of funding that supports the Americans with Disability Act, focus on corridor and small area grant awards, support grants for countywide pedestrian and bicycle planning, and create new grant funding that supports municipal pedestrian and bicycle programs.

NCDOT will work with colleges and universities to improve data, technology, and web applications that make planning and customer communication more efficient.



This diagram represents the partnerships and lead agencies necessary to address this principle.

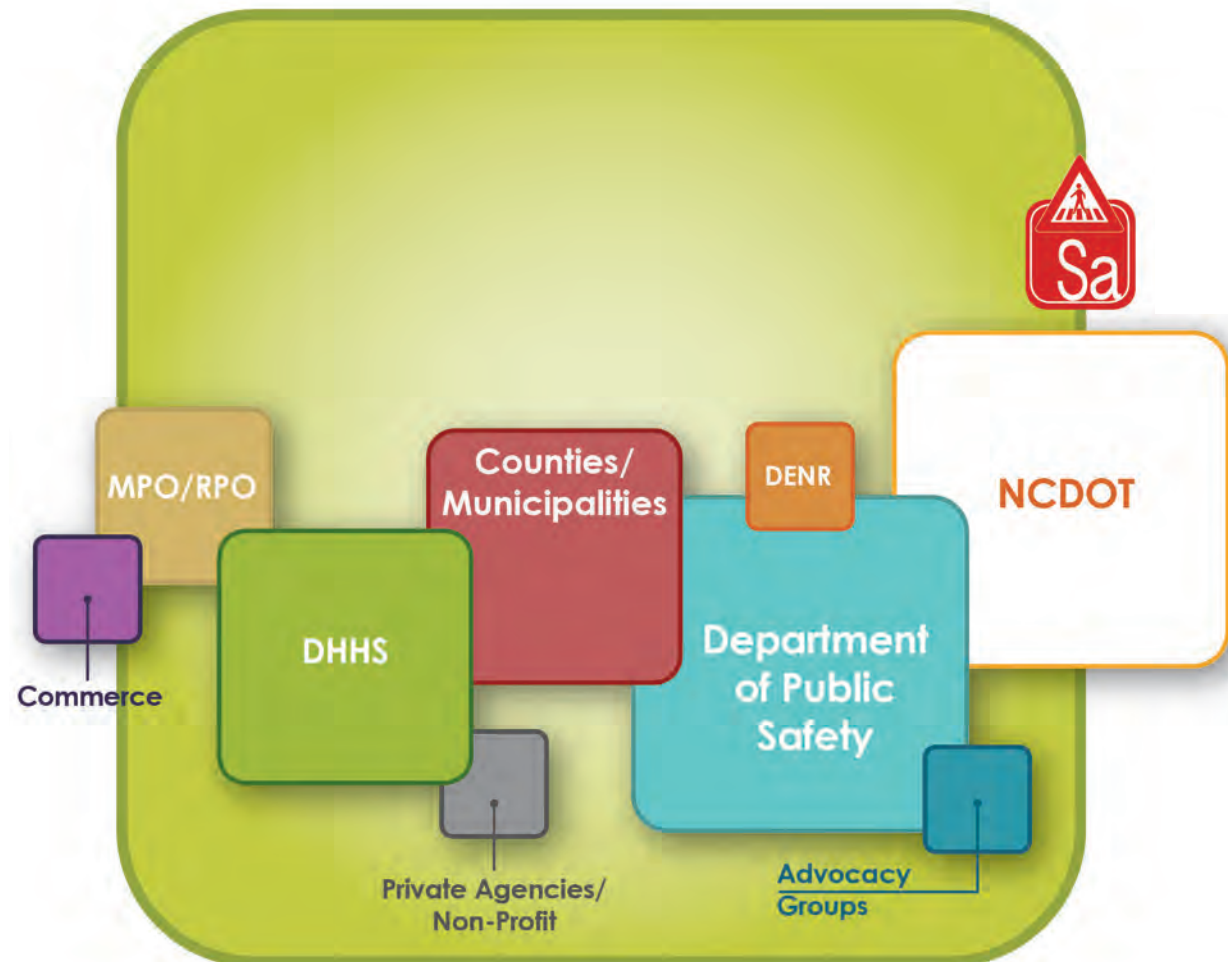
Mobility: Equity, choice, connectivity among transportation modes

Objectives (The WHAT)	Performance Measures (The EVALUATION)	Example Strategies (The HOW)
<ul style="list-style-type: none"> Expand and connect the local, regional and intrastate network of bicycle facilities Expand community-oriented pedestrian facilities Improve transportation equity Provide pedestrian and bicycle access to transit Reduce traffic congestion Improve performance-based program delivery Improve efficiency of technology and planning 	<ul style="list-style-type: none"> Pedestrian and bicyclist mode share Percentage of trips made by bicycling and walking Percentage of roadways that have sidewalks Percentage of roadways that have designated and/or separated bicycle facilities Percentage of signalized intersections with pedestrian crosswalks and crossing signals Regions/MPOs/Counties/Municipalities with bicycle/pedestrian/greenway plans Regions/MPOs/Counties/Municipalities implementing local bike/ped policies Compliance with Complete Streets Policy Percentage of eligible roadway projects built as Complete Streets Percentage of transit, rail and ferry hubs with complete access amenities for bike/ped Percentage of state bike routes with paved shoulder Customer pedestrian and bicycle counts 	<ul style="list-style-type: none"> Increase investment in walking and biking infrastructure Streamline project planning and delivery Complete Streets implementation <ul style="list-style-type: none"> » Update Roadway Design Manual and Bicycle/ Pedestrian Facility Design Guidelines » Pass Complete Streets as law Coordinate land use and transportation planning Enhance transit access policies and design to make transit accessible, attractive, and safe for pedestrians and bicyclists Update NCDOT's Bicycle and Pedestrian Transportation planning grant program <ul style="list-style-type: none"> » modernize its function and purpose » create a new category of funding that supports the Americans with Disability Act » focus on corridor and small area grant awards » support grants for countywide pedestrian and bicycle planning » create new grant funding that supports municipal pedestrian and bicycle programs Partner with the League of American Bicyclists to improve the Bicycle Friendly State Program ranking <ul style="list-style-type: none"> » includes annual evaluations and response to successful and unsuccessful programs appropriately to ensure sustainable future investments Establish an evaluation/benchmarking program Partner with colleges and universities to improve data development and technology



Principle Two: Improve Public Safety for Walking and Bicycling

A primary goal of this Plan is to improve safety for all roadway users through strategic, consistent and interconnected pedestrian and bicycle facility improvements, along with appropriate policies and strategies for accident prevention, education and enforcement. NCDOT and the North Carolina Department of Public Safety will work cooperatively with municipalities and law enforcement to implement the recommendations defined within this Plan.



This diagram represents the partnerships and lead agencies necessary to address this principle.

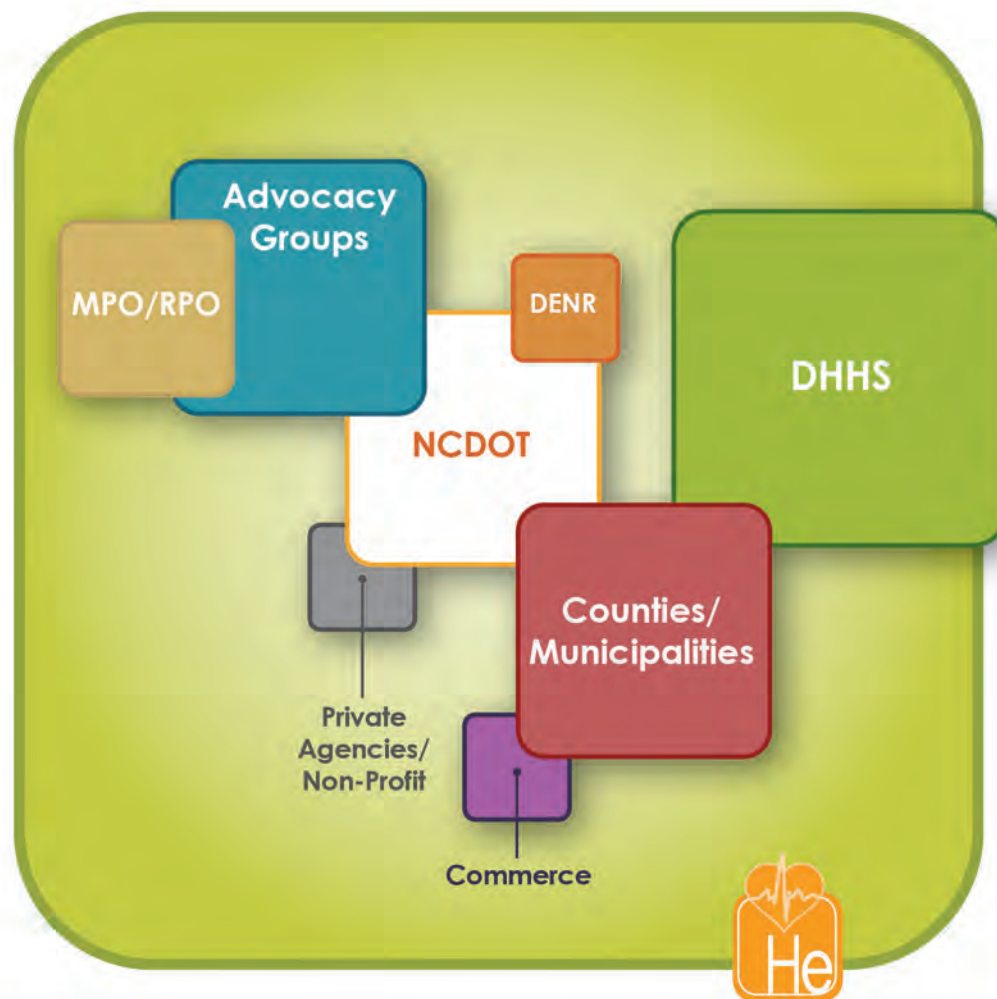
Safety: Public safety for pedestrians and bicyclists

Objectives (The WHAT)	Performance Measures (The EVALUATION)	Example Strategies (The HOW)
<ul style="list-style-type: none"> Create a strategic, consistent, and connected pedestrian and bicycle network Improve safety of pedestrians and bicyclists Increase and improve enforcement of motorist/bicyclist/pedestrian laws to ensure law abidance Improve crash data reporting and mapping and preventative/pro-active safety strategies 	<ul style="list-style-type: none"> Pedestrian and bicyclist crash and fatality rates (per capita) Pedestrian and bicyclist crash and fatality rates (per capita) relative to other states Number of schools participating in pedestrian and bicycle safety education/encouragement programs Cities, businesses, and universities designated as Bicycle and Walk Friendly by the League of American Bicyclists and the Highway Safety Research Center 	<ul style="list-style-type: none"> Make strategic facility improvements Use greater portion of HSIP for pedestrian and bicycle projects Improve enforcement efforts Continue education programs (including rights of the road) Develop policies and strategies for accident prevention Expand Safe Routes to School program Use FHWA Crash Modification Factors Build partnership between NCDOT, DHHS, and Department of Public Safety Establish evaluation/benchmarking program



Principle Three: Embrace Health and Wellness as a Vital Transportation Purpose

North Carolina must embrace a diversified statewide transportation program that contributes significantly to improved public health and wellness by providing and supporting the development of active living environments with safe, connected and accessible transportation facilities. The Department of Health and Human Services and NCDOT will work cooperatively with local health organizations, insurance companies and health care providers to implement the recommendations in this Plan to ensure that North Carolina's transportation system becomes part of successful intervention solutions.



This diagram represents the partnerships and lead agencies necessary to address this principle.

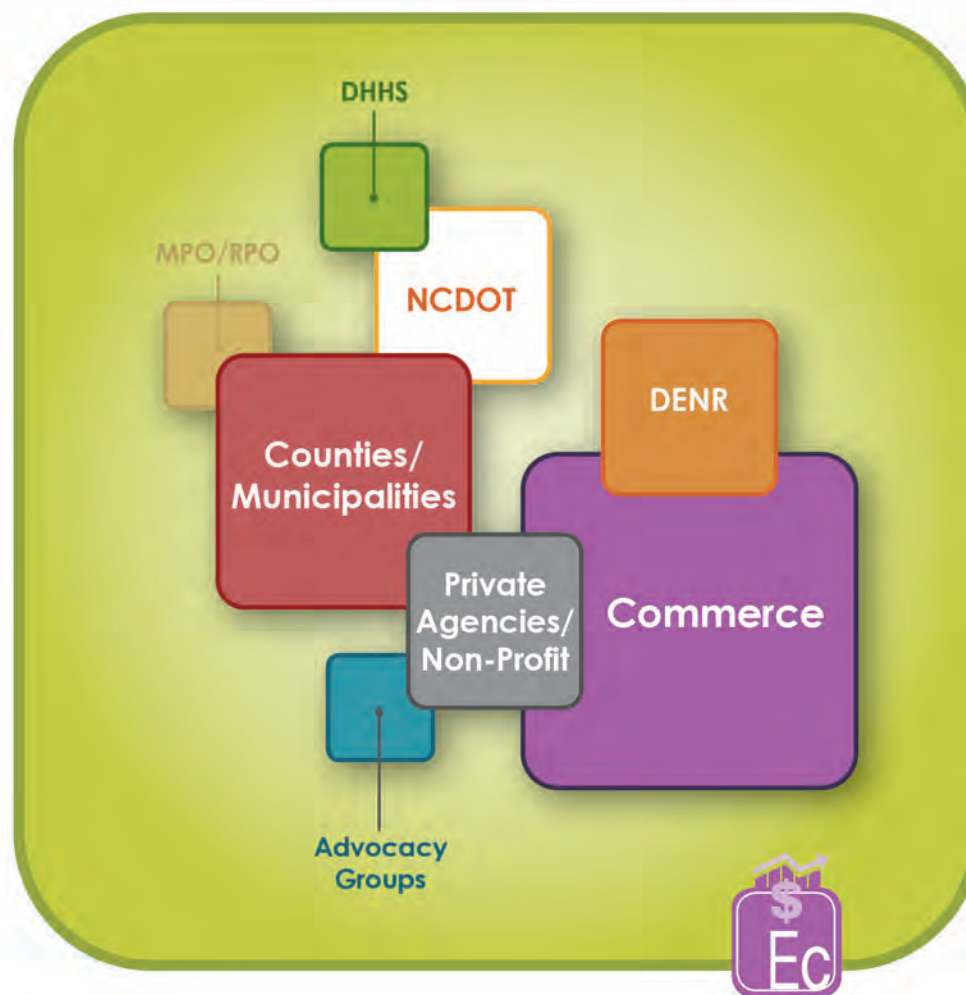
Public Health: Public health and wellness

Objectives (The WHAT)	Performance Measures (The EVALUATION)	Example Strategies (The HOW)
<ul style="list-style-type: none"> • Increase active living environments • Increase the safety, connectivity and accessibility of the bicycle and pedestrian network • Improve public health outcomes • Increase ADA compliance 	<ul style="list-style-type: none"> • Physical inactivity rates • Obesity rates • Pedestrian and bicyclist crash and fatality rates (per capita) relative to other states • Health care costs • Percent of projects that are ADA-compliant 	<ul style="list-style-type: none"> • Implement programs that encourage walking and bicycling • Involve health policy practitioners in project scoping and development • Continue DHHS Community Transformation Grant and NCDOT SRTS partnership • Incorporate HIAs into transportation projects • Expand education, encouragement, and enforcement programs • Build partnerships between NCDOT, DHHS, local health departments, health organizations, insurance companies, and health care providers. • Incorporate Public Right of Way Accessibility Guidelines into transportation development practices, strategies, and implementation • Establish evaluation/benchmarking program



Principle Four: Foster Robust Economic Development by Promoting Walking and Bicycling

North Carolina can maximize economic competitiveness, and return on transportation investment, by creating more accessible, attractive, walkable and bikeable communities. Walking and bicycle facilities and programs have been shown to stimulate job growth across North Carolina. The Department of Commerce will work with NCDOT, North Carolina visitors and convention bureaus, chambers of commerce, local governments and private sector interests to build on the broad partnership that was created to prepare this WalkBike NC Plan and explore ways in which we transform our state to become a national and international destination for bicycle and pedestrian tourism.



This diagram represents the partnerships and lead agencies necessary to address this principle.

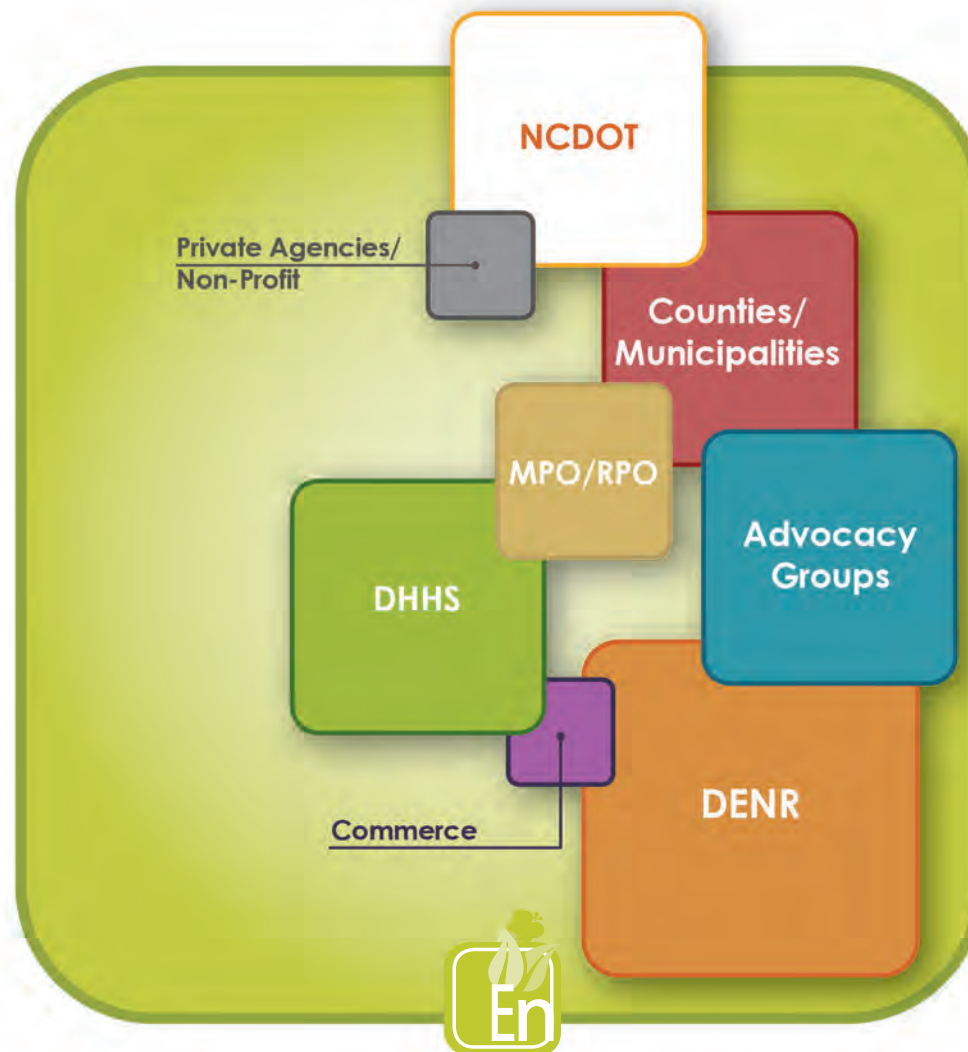
Economic Competitiveness: A Robust Economy

Objectives (The WHAT)	Performance Measures (The EVALUATION)	Example Strategies (The HOW)
<ul style="list-style-type: none"> • Use transportation investment to support economic development and job creation • Increase attractiveness and quality-of-life through walkable and bikable communities • Measure return on investment of active transportation investments • Become a national and international destination for bicycle and pedestrian tourism • Use return on investment analyses to inform transportation decision-making • Leverage effective funding strategies for active transportation investment to meet long-term needs 	<ul style="list-style-type: none"> • Return-on-investment measures <ul style="list-style-type: none"> » Tourism » Property Values » Job Creation » Small business development » Individual quality-of-life measures • Percentage of project costs supported by local funding, public-private partnerships, and/or other cost recovery mechanisms • New business start-ups due to walkability and bikability of community 	<ul style="list-style-type: none"> • Promote walking and bicycling • Enhance web presence at www.visitnc.com and www.accessnc.com • Expand Main Street Program to include Complete Streets design elements • Build partnerships between NCDOT, Department of Commerce, visitors and convention bureaus, chambers of commerce, local governments, and private sector • Initiate North Carolina-based return on investment analyses and post-construction assessment for active transportation infrastructure to inform decision-making • Diversify the funding stream that supports investment in bicycle and pedestrian facility and program development • Establish evaluation/benchmarking program



Principle Five: Encourage Stewardship of North Carolina's Natural & Cultural Resources

North Carolina's land, air and water resources are the foundation of quality living, economic prosperity and community identity. NCDOT is committed to conserving and protecting North Carolina's natural and cultural heritage while at the same time providing world-class transportation facilities and programs. To accomplish these goals, the Department of Environment and Natural Resources will work with NCDOT to utilize the Conservation Planning Tool (CPT) for transportation planning and design. North Carolina should continue its national leadership in local, regional and statewide greenway development by completing a Greenprint for North Carolina.



This diagram represents the partnerships and lead agencies necessary to address this principle.

Stewardship of our Environment: Conserve and protect North Carolina's natural and cultural heritage

Objectives (The WHAT)	Performance Measures (The EVALUATION)	Example Strategies (The HOW)
<ul style="list-style-type: none"> Reduce automobile dependence Increase the active transportation linkages between the state's natural and cultural resources Conserve and protect North Carolina's natural resources Expand statewide greenway network 	<ul style="list-style-type: none"> Percentage of planning and design efforts that utilize Conservation Planning Tool Reduction in transportation-related emissions due to increase in walking/bicycling trips Miles of greenways/shared-use paths 	<ul style="list-style-type: none"> Complete a Greenprint for North Carolina Expand the statewide network of greenways that links key cultural and natural heritage activity centers (could be economic, too) Build partnerships between NCDOT, DENR, DWQ, CTNC, DPR, land trusts, and non-profits. Utilize the Conservation Planning Tool (CPT) for transportation planning and design Update and coordinate trail design guidelines (NCDOT, DENR, DWQ) Establish evaluation/benchmarking program

Funding

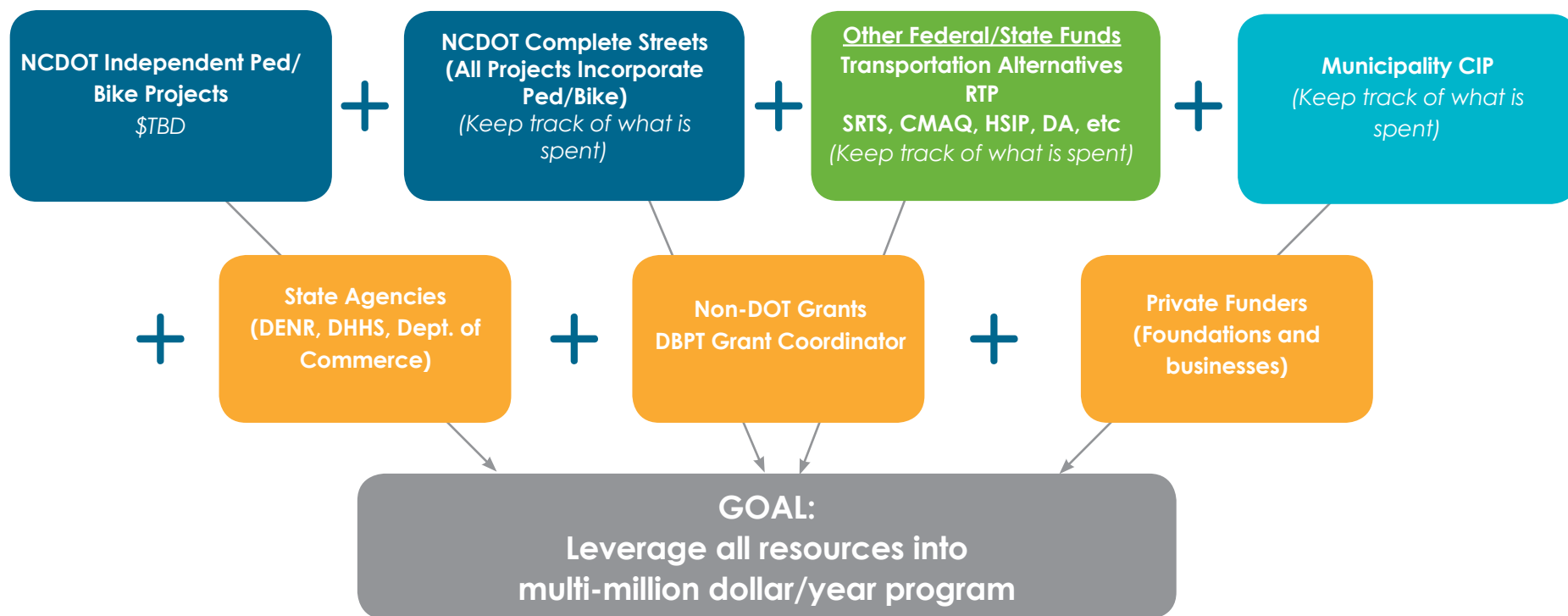
With pedestrian and bicycle customer need clearly expressed in this Plan, additional funding is needed to improve the current LOS “D.” This can be achieved in two clear ways: 1) Implement Complete Streets as common practice in new construction and reconstruction so that pedestrian and bicycle improvements are included elements in projects, not just incidentals, and 2) Build and retrofit pedestrian and bicycle facilities to improve connectivity, safety, and mobility.

One of the greatest challenges of North Carolina's transportation infrastructure is paying for the cost of network expansion, recurring operations, and maintenance. It is necessary to diversify the funding stream that supports investment in bicycle and pedestrian facility and program development by inviting and encouraging a broader range of public and private sector funding partners at the local, subregional, regional and state level. The NCDOT 2040 Plan defines the need to better relate revenues and funding to mode share. Currently, there is a significant unmet need for pedestrian and bicycle facilities throughout North Carolina. NCDOT and its partners are committed to funding pedestrian and bicycle projects and programs in a manner that reduces the unmet customer need. Financial support is needed from local governments and the private sector to address and resolve this unmet need.

Further, NCDOT should develop methods of tracking the funds spent on walking and bicycle facility improvements and programs so that it is possible to benchmark the success of the financial commitment and support for pedestrian and bicycle transportation.

The funding chart on the following page demonstrates the future comprehensive and diversified approach necessary to move forward.

Pedestrian and Bicycle Funding Chart: New Federal Transportation Bill (Map-21)



CMAQ - Congestion Mitigation and Air Quality
DA - Directly Attributable; RTP - Recreational Trails Program

SRTS - Safe Routes to School
CIP - Capital Improvement Program

HSIP - Highway Safety Improvement Program
DBPT - Division of Bicycle and Pedestrian Transportation

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